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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,335	06/27/2002	Toshio Ota	SHIM014	1341

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BOZICEVIC, FIELD & FRANCIS LLP  
1900 UNIVERSITY AVENUE  
SUITE 200  
EAST PALO ALTO, CA 94303

EXAMINER

CALAMITA, HEATHER

ART UNIT PAPER NUMBER

1637

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/019,335

Applicant(s)

OTA ET AL.

Examiner

Heather G. Calamita, Ph.D.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) 6 and 7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8/22/02; 10/23/02
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Status of Application, Amendments, and/or Claims*

1. The response filed January 28, 2005 has been entered. Claims 1-5 are currently pending and under examination.

### *Claim Objections*

2. Claims 4-5 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to the other claims in the alternative only. See MPEP § 608.01(n).
3. Claim 1 is objected to because of the following informalities: In claim 1 b) line 4 have a CAP structures should read have CAP structures. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki et al. (Gene, 1997, cited in IDS).

Suzuki et al. teach (claim 1) a method for constructing a cDNA library (see abstract line 1-3).

(a) treating the RNA sample containing mRNA and other RNA with alkaline phosphatase to remove phosphate groups from non-full-length mRNA molecules having phosphate groups at the 5'-ends (see p. 150 col. 1 under 2.4 oligo capping lines 3-4).

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(b) following the treatment of step (a), treating the mRNA sample with acid pyrophosphatase to convert the CAP structures of the full-length mRNAs in the sample into phosphate groups wherein the full-length mRNAs have CAP structures at their 5'-ends (see p. 150 col. 1 under 2.4 oligo capping lines 9-10)

(c) following the treatment of step (b), treating the RNA sample with RNA Ligase to ligate synthetic oligo-RNA (oligo-capping linkers) to the 5'-ends of mRNAs in the RNA sample, wherein the CAP structures of the mRNAs at the 5'-end are converted into phosphate groups (see p. 150 col. 2 line 5-6),

(d) selecting poly (A) RNAs from the RNA sample following the treatment of step (c) (see p. 150 col. 2 paragraph 2.5),

(e) performing reverse transcription using the poly (A) RNAs selected in step (d) as the templates, and the oligonucleotide complementary to the synthetic RNA used in step (c) or to a portion thereof and an oligo-dT adapter as the primers (see p. 150 col. 2 paragraph 2.5 and 2.6 lines 1-6).

With regard to claim 2, Suzuki et al. teach the alkaline phosphatase is bacterial alkaline phosphatase (see p. 150 col. 1 paragraph 2.4 line 4). With regard to claim 3, Suzuki et al. teach the acid pyrophosphatase is tobacco acid pyrophosphatase (see p. 150 col. 1 paragraph 2.4 line 10). With regard to claim 5, Suzuki et al teach oligo-capping is preformed at pH 8.0 (see p. 150 col. 1 paragraph 2.4 line 5).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (Gene, 1997, cited

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in IDS) in view of Lu et al. (Gene, 1988, cited in IDS).

The teachings of Suzuki et al. (Gene, 1997) are described previously.

Suzuki et al. do not teach the RNA sample is total RNA.

Lu et al. teach using total RNA in the construction of a cDNA library (see p. 164 col. 1 line12-16).

One of ordinary skill in the art at the time the invention was made one would have been motivated to apply the use of total RNA as taught by Lu et al. (Gene, 1988) to the method of constructing a cDNA library as taught by Suzuki et al. (Gene, 1997) in order to increase efficiency by condensing the poly A RNA enrichment process while protecting the mRNAs in the sample. Lu et al. states “the construction of cDNA libraries from unfractionated cytoplasmic RNA is less time consuming and more protective to mRNAs because ubiquitous RNses are presumably competitively inhibited by the large excess of poly (A) RNA molecules present throughout the whole procedure (see p. 164 col. 1 lines 10-16).” It would have been prima facie obvious to use of total RNA as taught by Lu et al. (Gene, 1988) with the method of constructing a cDNA library as taught by Suzuki et al. (Gene, 1997) in order to achieve the expected advantage of increasing the proportion of full-length cDNA while reducing the number of steps in the process.

### *Summary*

6. No claims were allowed.

### *Correspondence*

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heather G. Calamita whose telephone number is 571.272.2876 and whose e-mail address is heather.calamita@uspto.gov. However, the office cannot guarantee security through the e-mail system nor should official papers be transmitted through this route. The examiner can normally be reached on Monday through Thursday, 7:00 AM to 5:30 PM.

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If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Gary Benzion can be reached at 571.272.0782.


Papers related to this application may be faxed to Group 1637 via the PTO Fax Center using the fax number 571.273.8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to 571.272.0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public. For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

hgc

  
JEFFREY FREDMAN  
PRIMARY EXAMINER

3/11/07